

CLAIMS

1. A filter cartridge assembly comprising:
 - a) a cylindrical filter element defining an outer periphery, an inner periphery and opposed end surface regions;
 - 5 b) a hydrophilic polymeric surface treatment in said opposed end surface regions of said filter element, said polymeric surface treatment being chemically linked to the surface of the filter element in said opposed end surface regions; and
 - c) polypropylene end caps bonded to said opposed end surface regions of said cylindrical filter element;
- 10 wherein said filter element is integrity testable in water.
2. A filter cartridge assembly according to claim 1, wherein said hydrophilic polymeric surface treatment is effected using a polymeric solution or dispersion that includes a polymeric material selected from the group consisting of polyvinyl alcohol, polyethyleneimine, a combination of 1-4 butanediol diglycidyl ether and ethylene
- 15 amine, and a quaternary amine polyepichlorohydrin.
3. A filter cartridge assembly according to claim 1, wherein said cylindrical filter element is fabricated from a material selected from the group consisting of nylon, polyethersulfone (PES) and/or polyvinylidene fluoride (PVDF).
4. A filter cartridge assembly according to claim 1, wherein said filter element is porous
- 20 and wherein said hydrophilic polymeric surface treatment is non-occlusive with respect to said porosity of said filter element.

5. A method for fabricating a filter cartridge comprising:
- a) providing a cylindrical filter element defining an outer periphery, an inner periphery and opposed end surface regions;
 - b) applying a hydrophilic polymeric surface treatment to said opposed end surface regions of said filter element, said polymeric surface treatment undergoing cross linking and chemically linking to the surface of the filter element in said opposed end surface regions;
 - c) bonding polypropylene end caps to said surface treated opposed end surface regions of said cylindrical filter element; and
 - d) integrity testing said filter element in water.
6. A method for fabricating a filter cartridge according to claim 5, wherein said hydrophilic polymeric surface treatment is effected using a polymeric solution or dispersion that includes a polymeric material selected from the group consisting of polyvinyl alcohol, polyethyleneimine, a combination of 1-4 butanediol diglycidyl ether and ethylene amine, and a quaternary amine polyepichlorohydrin.
7. A method for fabricating a filter cartridge according to claim 5, wherein said cylindrical filter element is fabricated from a material selected from the group consisting of nylon, polyethersulfone (PES) and/or polyvinylidene fluoride (PVDF).
8. A method for fabricating a filter cartridge according to claim 5, wherein said filter element is porous and wherein said hydrophilic polymeric surface treatment is non-occlusive with respect to said porosity of said nylon filter element.
9. A method for fabricating a filter cartridge according to claim 5, wherein said application of said hydrophilic polymeric surface treatment is effected by dipping said

opposed end surface regions in a hydrophilic polymeric solution or dispersion and curing said hydrophilic polymeric surface treatment.

10. A method for fabricating a filter cartridge comprising:

- 5 a) applying a hydrophilic polymeric surface treatment to opposed end surface regions of filter element roll stock;
- b) curing said hydrophilic polymeric surface treatment to said opposed end surface regions, such that said polymeric surface treatment undergoes cross linking and chemically links to the surface of the filter element roll stock in said opposed end surface regions;
- 10 c) forming a cylindrical filter element using said filter element roll stock, said filter element defining an outer periphery, an inner periphery and opposed end surfaces with said cured hydrophilic polymeric surface treatment positioned at said opposed end surfaces;
- d) bonding polypropylene end caps to said opposed end surfaces of said cylindrical filter element; and
- 15 e) integrity testing said filter element in water.

11. A method for fabricating a filter cartridge according to claim 10, wherein said hydrophilic polymeric surface treatment is effected using a polymeric solution or dispersion that includes a polymeric material selected from the group consisting of

20 polyvinyl alcohol, polyethyleneimine, a combination of 1-4 butanediol diglycidyl ether and ethylene amine, and a quaternary amine polyepichlorohydrin.

12. A method for fabricating a filter cartridge according to claim 10, wherein formation of said cylindrical filter element includes pleating of said filter element roll stock.

13. A method for fabricating a filter cartridge according to claim 10, wherein said filter element is porous and wherein said hydrophilic polymeric surface treatment is non-occlusive with respect to said porosity of said filter element.
14. A method for fabricating a filter cartridge according to claim 10, wherein said
5 application of said hydrophilic polymeric surface treatment to said opposed surface regions is effected using apparatus selected from the group consisting of pinch rollers, slot dies, a sprayer system, and combinations thereof.
15. A method for fabricating a filter cartridge according to claim 10, wherein said curing of
10 said hydrophilic polymeric surface treatment includes exposing said opposed end surface regions to heat.
16. A method for fabricating a filter cartridge according to claim 15, wherein said heat is supplied by apparatus selected from the group consisting of an infrared heater, a convection oven, and combinations thereof.